

Chapter 8 quiz 1, November 23, 2011. 10 minutes.

Q1. In a hypothesis test, whether you conclude to reject or accept, there is a positive probability that your conclusion is wrong. Why? (See the lecture notes.)

Q2. What is a type-I error? What is a type-II error?

Q3. Suppose $X \sim N(\mu, \sigma^2)$. With a random sample of size 20, we test $H_0 : \mu = 3$ versus the following alternatives. A decision rule is given in each case. Determine whether the decision rule is reasonable (Judge by the form of the rule only; don't worry about whether the specific values are chosen well.)

1. $H_a : \mu > 3$: reject H_0 if $\bar{x} < 2$.
2. $H_a : \mu > 3$: reject H_0 if the minimum observation is > 4 .
3. $H_a : \mu \neq 3$: reject H_0 if $\bar{x} < 2$ or $\bar{x} > 4$.
4. $H_a : \mu < 3$: reject H_0 if $\bar{x} < 2$.